IN THE CLAIMS:

1. (amended) [Optical amplification and coupling device of the multimode interference type, the device comprising at least one segment of a multimode wave guide containing an amplifying material to amplify light that propagates in it, characterized in that the amplifying material is contained in a first part of the guide segment in which the light is spatially deconcentrated, a second part of the guide segment in which light is concentrated and which continues beyond the end of the first part being made of a transparent material] A multi-mode interferometric coupler, comprising:

a first amplifying part (2), and

a second transparent part (4) to guide radiation previously amplified in the first part.

2. (amended) [Amplification and coupling device] The multi-mode coupler according to claim 1, wherein the first and second parts [being] are separated by [an interference (6) curved inwards] a curved interface (6).

3. (amended) [Amplification and coupling device] The multi-mode coupler according to claim 1, wherein the first and second parts [being] are separated by a [<<V>>] V-shaped interface (6).

4. (amended) [Amplification and coupling device] The multi-mode coupler according to claim 1, wherein the first and second parts [being] are separated by a zigzag shaped interface (6).

5. (amended) [Amplification and coupling device] The multi-mode coupler according to claim 1, wherein the first and second parts [being] are separated by an inclined interface (6) [along the] on a path of [incoming] input (8) and [outgoing] output (10) rays.

6. (amended) [Amplification and coupling device] The multi-mode coupler according to claim 1, wherein the first and second parts [being placed] are laid out to be approximately perpendicular to [the] a path of [the] an incident beam (8) and an [outgoing] output beam (10).

7. (amended) [Amplification and coupling device] The multi-mode coupler according to any [one] of [the previous] claims 1-6, wherein a single mode guide [being] is placed at [the exit from] an output of the second part.

8. (amended) [Amplification and coupling device] The multi-mode coupler according to [any one of the previous claims,] claim 1, wherein the amplifier material [being] is a structure embedded in an InP substrate.

9. (amended) [Amplification and coupling device] The multi-mode coupler according to [any one of claims 1 to 7, the amplifying material being] claim 1, wherein the amplifying material is a laser material.

10. (amended) [Amplification and coupling device] The multi-mode coupler according to claim 9, wherein the laser material [being] is an InGaAsP quaternary.

11. (amended) [Amplification and coupling device] The multi-mode coupler according to [any one of claims 1 to 7,] claim 1, wherein the amplifying material [having] has quantic wells.

12. (amended) [Optical] An optical amplifier comprising:

[-] an optical pre-amplifier, and

[- an amplification and coupling device] a coupler according to one of claims 1 to 11.

13. (amended) Process for amplifying the power of a light source emitting radiation, consisting of placing [an amplification and coupling device] a coupler according to any one of claims 1 to 11, or an optical amplifier according to claim 12, [on] in the path of the said radiation.

14. (amended) Process [for compensating] to compensate for losses in an optical fiber consisting of placing [an amplification and coupling device] a coupler according to any one of claims 1 to 11, or an optical amplifier according to claim 12, in the path of radiation passing through the optical fiber.

15. (amended) Process for amplification of [wave length multiplexed signals] signals multiplexed in wave length, consisting of increasing the output power using [an amplification and coupling device] a coupler according to one of claims 1 to 11, or an optical amplifier according to claim 12.

REMARKS

If there are any additional fees resulting from this communication not covered by the enclosed check, or if the check was omitted, please charge all uncovered fees to our Deposit Account No. 16-0820, our Order No. 32433.

Respectfully submitted,

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